

Amendments to the Claims:

A clean version of the entire set of pending claims, including amendments to the claims, is submitted herewith per 37 CFR 1.121(c)(3). This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A molecular stamp for printing biomolecules onto a substrate, the stamp comprising a hydrophylic polymeric gel and having a patterned surface, ~~characterized in that~~ wherein the gel has at least 20% crosslink density.

2. (Currently Amended) The molecular stamp of claim 1 wherein the gel is obtainable by polymerizing at least one of a water soluble ethylenically unsaturated and/or epoxidated monomer containing at least one functional group selected from a hydroxy, alkoxy, amine, alkyl substituted amine, carboxylate, carboxylic ester, carboxylic anhydride, carboxamide, carbamate, urethane, and urea group, in the presence of a polymerization initiator ~~and optionally a chain transfer agent~~, and crosslinking the polymer with a crosslinker having at least two ethylenically unsaturated groups and/or epoxy groups.

3. (Previously Presented) The molecular stamp of claim 1 wherein the monomer is a hydroxyalkyl(meth)acrylate and the crosslinker is a polyethyleneglycol di(meth)acrylate.

4. (Previously Presented) The molecular stamp of claim 1 wherein the stamp is self-supporting.

5. (Previously Presented) The molecular stamp of claim 1 wherein the crosslink density is at least 40%.

6. (Previously Presented) The molecular stamp of claim 1 wherein the polymer concentration is at least 50%.

7. (Currently Amended) A method for preparing ~~the a biomolecular stamp having a pattern on a surface thereof, the method comprising of claim 1:~~

~~_____ providing a master having formed on a surface thereof a pattern that is an inverse of the pattern for the biomolecular stamp;~~

~~_____ applying spacers and a cover glass onto the master;~~

~~_____ providing onto the master a mixture including,~~

~~_____ at least one of a water soluble ethylenically unsaturated and/or epoxidated monomer containing at least one functional group selected from a hydroxy, alkoxy, amine, alkyl substituted amine, carboxylate, carboxylic ester, carboxamide, anhydride, urethane, and urea group,~~

~~_____ a cross-linker having at least two ethylenically unsaturated groups and/or epoxy groups, and~~

~~_____ a polymerization initiator;~~

~~[[-]] polymerizing the at least one of a water soluble ethylenically unsaturated and/or epoxidated monomer containing at least one functional group selected from a hydroxy, alkoxy, amine, alkyl substituted amine, carboxylate, carboxylic ester, carboxamide, anhydride, urethane, and urea group, in the presence of a polymerization initiator and optionally a chain transfer agent, and [[-]] crosslinking the polymer with [[a]]the crosslinker having at least two ethylenically unsaturated groups and/or epoxy groups to a crosslinked polymer with a crosslink density of at least 20% to produce the biomolecular stamp having the pattern on the surface thereof; and~~
~~_____ peeling the biomolecular stamp off of the master.~~

8. (Currently Amended) A method of printing biomolecules onto a substrate, preferably a gold substrate, comprising the steps:

~~— optionally swelling the stamp of any one of claims 1-6 with water or buffer~~

~~[[-]] loading a biomolecule onto the patterned surface of the stamp by~~

contacting the patterned surface of the stamp with the biomolecule,
~~optionally rinsing the surface with water or a buffer and/or drying the stamp,~~
and

[[~~-~~]] bringing the patterned surface of the stamp with the adsorbed biomolecule into contact with ~~[[a]]~~the substrate followed by transferring the biomolecule from the stamp to the substrate.

9. (New) The method of claim 7, wherein the polymerization is performed in the presence of a chain transfer agent.

10. (New) The method of claim 7, wherein the mixture comprises:
about 40 wt. % hydroxyethyl acrylate;
about 10 wt. % polyethyleneglycol diacrylate;
about 50 wt. % water; and
about 0.5 wt. % of a photoinitiator.

11. (New) The method of claim 7, wherein the mixture comprises:
about 72 wt. % hydroxyethyl acrylate;
about 18 wt. % polyethyleneglycol diacrylate;
about 10 wt. % water; and
about 0.5 wt. % of a photoinitiator.

12. (New) The method of claim 8, further comprising rinsing the patterned surface of the stamp having the adsorbed biomolecule with a buffer prior to bringing the patterned surface of the stamp into contact with the substrate.

13. (New) The method of claim 12, further comprising drying the stamp having the adsorbed biomolecule with a stream of nitrogen prior to bringing the patterned surface of the stamp into contact with the substrate.

14. (New) The method of claim 8, further comprising drying the stamp having the adsorbed biomolecule with a stream of nitrogen prior to bringing the patterned surface of the stamp into contact with the substrate.